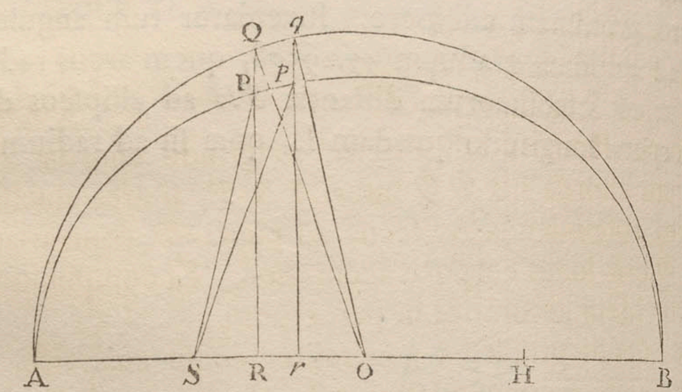
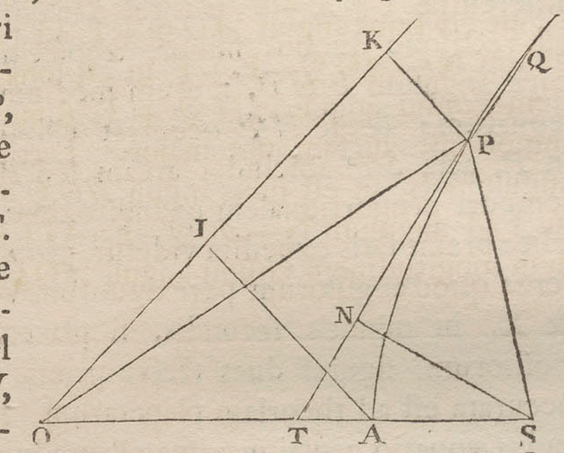
tempus, quo corpus deſcripſit arcum Ap, ad tempus revolutionis unius in ellipſi. Sit angulus iſte N. Tum capiatur & angulus D ad angulum B, ut eſt ſinus iſte anguli AOQ ad radium, & angulus E ad angulum N$-AOQ+$D, ut eſt longitudo L ad longitudinem eandem L coſinu anguli AOQ diminutam, ubi angulus iſte recto minor eſt, auctam ubi major. Poſtea capiatur tum angulus F ad angulum B, ut eſt ſinus anguli $AOQ+$E ad radium, tum angulus G ad angulum N$-AOQ-$E$+$F ut eſt longitudo L ad longitudinem eandem coſinu anguli $AOQ+$E diminutam ubi angulus iſte recto minor eſt, auctam ubi major. Tertia vice capiatur angulus H ad angulum B, ut eſt ſinus anguli $AOQ+$E$+$G ad radium; & angulus I ad angulum N$-AOQ-$E$-$G$+$H, ut eſt longitudo L ad eandem longitudinem coſinu anguli $AOQ+$E$+$G diminutam, ubi an-



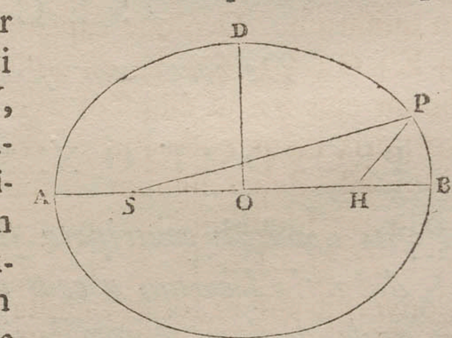
gulus iſte recto minor eſt, auctam ubi major. Et ſic pergere licet in infinitum. Denique capiatur angulus AOq æqualis angulo AOQ $+$E$+$G$+$I$+$ &c. Et ex coſinu ejus Or & ordinata pr, quæ eſt ad ſinum ejus qr ut ellipſeos axis minor ad axem majorem, habebitur corporis locus correctus p. Si quando angulus N$-AOQ+$D negativus eſt, debet ſignum $+$ ipſius E ubique mutari in $-$, & ſignum $-$ in $+$. Idem intelligendum eſt de ſignis ipſorum G & I, ubi anguli N$-AOQ-$E$+$F, & N$-AOQ-$E$-$G$+$H negativi prodeunt. Convergit autem ſeries infinita $AOQ+$E$+$G$+$I$+$ &c. quam celerrime, adeo ut vix unquam opus fuerit ultra progredi quam ad terminum ſecundum E. Et fundatur calculus in hoc theoremate, quod area APS ſit ut differentia inter arcum AQ & rectam ab umbilico S in radium OQ perpendiculariter demiſſam.

Non

Non diſſimili calculo conficitur problema in hyperbola. Sit ejus centrum O, vertex A, umbilicus S & aſymptotos OK. Cognoſcatur quantitas areæ abſcindendæ tempori proportionalis. Sit ea A, & fiat conjectura de poſitione rectæ SP, quæ aream APS abſcindat veræ proximam. Jungatur OP, & ab A & P ad aſymptoton agantur AI, PK aſymptoto alteri parallelæ, & per tabulam logarithmorum dabitur area $AIKP$, eique æqualis area OPA, quæ ſubducta de triangulo OPS relinquet aream abſciſſam APS. Applicando areæ abſcindendæ A & abſciſſæ APS differentiam duplam $2APS-2$A vel 2A$-2APS$ ad lineam SN, quæ ab umbilico S in tangentem TP perpendicularis eſt, orietur longitudo chordæ PQ. Inſcribatur autem chorda illa PQ inter A & P, ſi area abſciſſa APS major ſit area abſcindenda A, ſecus ad puncti P contrarias partes: & punctum Q erit locus corporis accuratior. Et computatione repetita invenietur idem accuratior in perpetuum.



Atque his calculis problema generaliter confit analytice. Verum uſibus aſtronomicis accommodatior eſt calculus particularis qui ſequitur. Exiſtentibus AO, OB, OD ſemiaxibus ellipſeos, & L ipſius latere recto, ac D differentia inter ſemiaxem minorem OD & lateris recti ſemiſſem $\frac{1}{2}$L; quære tum angulum Y, cujus ſinus ſit ad radium ut eſt rectangulum ſub differentia illa D, & ſemiſumma axium $AO+OD$ ad quadratum axis majoris AB; tum angulum Z, cujus ſinus ſit ad radium ut eſt duplum rectangulum ſub umbilicorum diſtantia SH & differentia illa D ad triplum quadratum ſemiaxis majoris AO. His angulis ſemel inventis; locus corporis ſic deinceps determinabitur. Sume angulum T proportionalem tempori quo arcus BP deſcriptus eſt, ſeu motui medio (ut loquuntur) æqualem; & angulum V,



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